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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P03016	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NO2004/000194	International filing date (day/month/year) 25.06.2004	Priority date (day/month/year) 30.06.2003
International Patent Classification (IPC) or both national classification and IPC B22D11/06		
Applicant NORSK HYDRO ASA ET AL.		

1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 21.01.2005	Date of completion of this report 05.10.2005
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Kellner, M Telephone No. +49 89 2399-2917 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NO2004/000194**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-9 as published

Claims, Numbers

1-10 as published

Drawings, Sheets

1/5-5/5 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NO2004/000194

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1
Inventive step (IS)	Yes: Claims	
	No: Claims	4,8
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

1. The subject matter of the claims is industrially applicable such that the requirements of Article 33(4) PCT are met.
2. The closest state of the art of the casting method and apparatus of the present application would be that taught in US-3,552,478-A (D1). This document teaches a method and an apparatus for continuous casting by means of an intermediate launder connected to a vacuum source for the purpose of reducing the metallostatic pressure on the melt in the mould.
3. The independent claim 1 in its preamble mentions technical features that are known from D1. The characterising part of claim 1 states a result to be achieved instead of mentioning the necessary method steps to be done. Hence, the claim lacks apparently essential features of the invention. Moreover, the expression "the metallostatic pressure ... is principally zero" is not consistent with the wording throughout the description which states the pressure to be "virtually zero".

Consequently, the independent claim 1 does not meet the requirement of clarity of Article 6 PCT.

- 3.a The teaching of the present specification would not seem to add to the art known from D1 any features that could cast any doubt on the functioning of the known device to be different from that defined in claim 1. Hence, notwithstanding the above objection for lack of clarity, the subject matter of claim 1 would not be novel over the teaching of D1 were the clarity objections to be remedied.
4. The further features of the dependent claims 2-4 do not add any consecutive steps necessary for carrying out a method. Instead; claim 2 merely states "makes it possible"; claim 3 describes the operation of a machine and the effect thereof; claim 4 defines structural features of a casting machine with a hot top instead of method steps.

Consequently, these claims do not meet the requirement of clarity (Art. 6 PCT) either.

5. The independent apparatus claim 5 states in its preamble features in common with D1 and its characterising part that "the metal is designed to be supplied ...". Firstly it

is very difficult to visualize how the metal can be designed in a molten condition and secondly, the wording contains a very vague teaching in respect of the structural features which does not meet the requirement of clarity of Article 6 PCT.

6. The dependent claim 6 again mentions that "the metal is designed" and a metal supply system. Such a supply system is taught in D1, see items 11-13, in connection with the other features of claims 5 and 6.

Dependent claim 7 mentions a reservoir and a distribution chamber, both of which are understood to be equivalent to the reservoir 14 and the launder 12 taught in D1. The following description of an achieved function would not seem to differ from the function described in D1.

Means and method for casting of aluminium with a hot top mould are taught in the further document US-4,157,728-A (D2). It would not cause the skilled person much problem to apply the supply system known from D2 in the hot top mould taught in D2. Hence, the additional features mentioned in the dependent claim 8 would not present any inventive step.

The dependent claims 9 and 10 only specify the operation of the casting machine instead of defining its structure.

7. Should the present application be further prosecuted, the applicant is requested to take the information of the documents listed in the International Search Report.